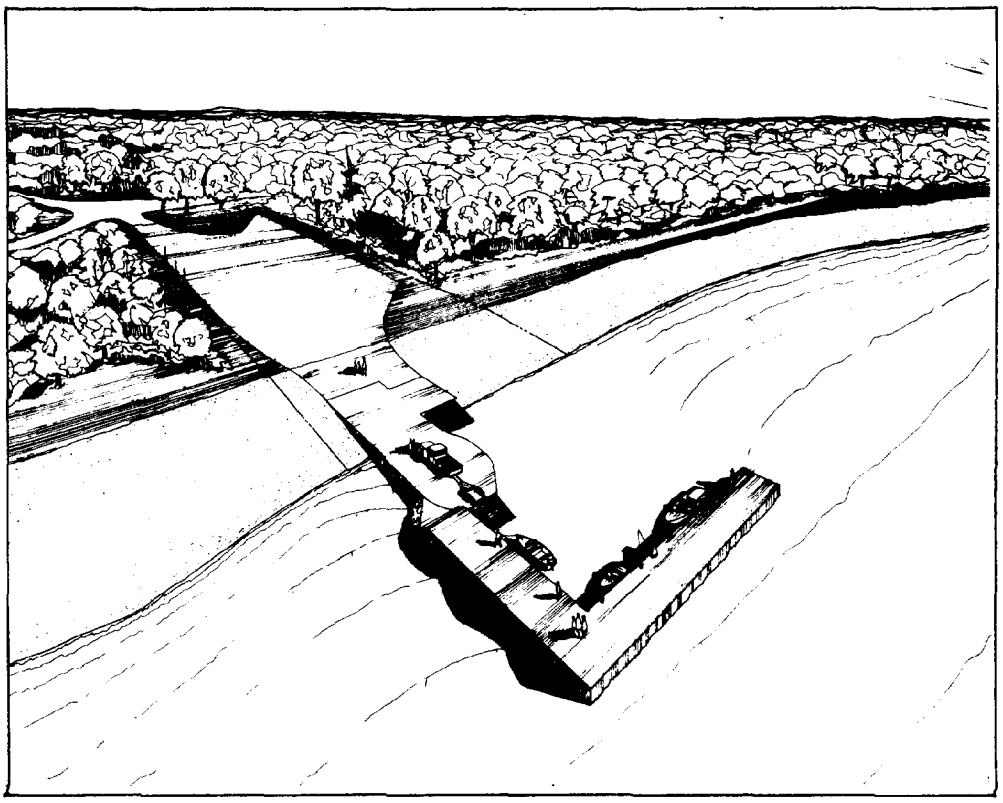
FEASIBILITY STUDY FOR WHITEFISH BAY BOAT RAMP IMPROVEMENTS



TOWN OF SEVASTOPOL
DOOR COUNTY
WISCONSIN

COASTAL ZONE
INFORMATION CENTER

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W55
1982

ROBERT E. LEE & ASSOCIATES, INC.
CONSULTING ENGINEERS
Box 2100 Green Bay, WI 54306

FEASIBILITY STUDY

WHITEFISH BAY BOAT RAMP IMPROVEMENTS

TOWN OF SEVASTOPOL
DOOR COUNTY, WISCONSIN

JULY, 1982

TD195.B63W55 1982

This study was accomplished in part through the financial assistance provided by the Coastal Management Program under the Department of Administration, State of Wisconsin; the Coastal Zone Management Act of 1972 as amended, administered by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration; and through volunteer time and equipment usage of the Harbor Advisory Committee and citizen participation.

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CHAPTER 1

INTRODUCTION

The use of public boat launching facilities in Door County has increased dramatically during the last decade. Tourism in the County has sharply increased, but more significantly, the revival of sport fishing along the Lake Michigan shoreline has put a heavy demand on smaller launch facilities along the Lake shore. These smaller launch facilities can generally handle boats 20 feet in length and under, as is the case at the Whitefish Bay boat ramp in the Town of Sevastopol.

The main objective of the study is to determine the feasibility of constructing a breakwater at the ramp to provide protection from wave action for people retrieving their boats when the waves increase in size. The intent of any breakwater at this ramp is not to provide an all-weather harbor.

The scope of this study includes:

1) A review of the existing facility, both the ramp and the on-land parking area.

2) Determine the types and configuration of breakwater alternatives.

3) Develop a plan for land improvements such as parking and sanitary facilities.

4) Environmental analysis of construction and operation.

5) Economic analysis of demand, development cost, and revenue.

6) Recommendations.

Sources of Information

The data used in preparing this report was obtained from on-site surveys and input from the local Harbor Advisory Committee of the Town of Sevastopol. Public information was obtained from the U.S. and Wisconsin Geological Surveys, Wisconsin Department of Natural Resources, U.S. Army Corps of Engineers, Door County Planning Commission, Bay Lake Regional Plan Commission, the Coastal Zone Administration, and the City of Sturgeon Bay.

CHAPTER 2

EXISTING FACILITY

Location

The Whitefish Bay boat ramp is located in the Town of Sevastopol, Door County, Wisconsin, on Lake Michigan just south of the outlet of Logan Creek. A smaller ramp with less adequate access is located approximately 4-1/2 miles south. Larger ramps capable of handling boats larger than those 20 feet in length are located in the City of Sturgeon Bay (15 miles south) and at Baileys Harbor (12 miles north). Cottages and summer homes, as well as year-round residential properties, exist along the shore of Lake Michigan on each side of the ramp facility at Whitefish Bay.

Physical Features

The existing ramp was constructed in 1968 by the Town of Sevastopol with financial assistance from the Carlsville Rod and Gun Club. After subsequent improvements, the ramp exists as a concrete surface contained by steel sheet piling on each side. Extension of the ramp to a launchable water depth is accomplished with a steel grating type ramp which is removable. The ramp is totally exposed to wave action in Lake Michigan. Because of this exposure, boat launching can

Wisconsin Coastal Management Program

Progress Report

For WCMP Staff Use
WCMP Project Number: 822.1
Date Received:

AD-CM 4(5/80)

Submit this Progress Report to: Wisconsin Dept. of Administration
Office of Coastal Management
101 S. Webster Street, 7th Floor
Madison, WI 53702

Project Title: Protection of Whitefish Bay Boat Ramp	Purchase Order Number: 1063
Project Duration in MONTHS: 12 months	Report Period From: To: Final Report
Project Type (Check one or more): ☑ Improve SCA Management SCA Number ☐ Implement State Law ☐ CEIP (Coastal Energy Impact Project) ☐ Demonstration	CMP funds spent to date: $8,000.00 — % of budgeted funds: 100%
	Match spent to date: $2597.50 — % of budgeted funds: 103.9%
	Signature of project manager: Robert J. Mueller

1. Objectives of Project (as contracted):

The Town of Sevastopol seeks the preparation of a professional engineering landscape architectural report and plans which meet the needs and requirements of the Town, Army Corp, Dept. of Natural Resources and Wcmp relative to; 1.) investigating the feasibility (from engineering, environmental and economic perpectives) of protecting the existing boat ramp at Whitefish Bay and 2.) developing a detailed management plan for the site.

2. Thoroughly discuss progress made toward accomplishing objectives during this reporting period:

We have determined that to provide a long lasting maintenance free breakwater, a steel sheet piling or steel binwall enclosure be constructed. Both containments be filled and capped with concrete. Provisions should be made for flow-thru structures to minimize the deposition of littoral drift, which would help maintain the integrity of the shoreline as well as minimize the need for periodic dredging at the ramp.

3. Problems/Concerns (issues, project, or administrative concerns):

Funding for the project is of the most concern. All programs that would be available to help fund a project of this nature, are no longer in existence or are out of money.

4. Impact thus far, if any, of the project on the shoreline, coastal resources, or coastal residents:

To date there seems to be no impact.

Signature of person authorized to receive funds:

only be done under calm conditions. However, conditions on Lake Michigan can and do deteriorate rapidly, thus making retrieval of boats under adverse conditions very hazardous to both equipment and their operators. Broken bones and severe lacerations as well as damaged boats have occurred in the past.

The parking facility and ramp access utilizes a 90 foot wide lot owned by the Town of Sevastopol and the existing roadway right-of-way that extends to the shoreline at a width of approximately 66 feet. The land is partially improved with a gravel base for parking.

Usage

The majority of boaters using the ramp come from the local year-round population, and to a lesser degree, tourists. The ramp is in close proximity to two popular fishing areas on Lake Michigan, namely the "Bank" northeast of the Sturgeon Bay ship canal and the Cave Point area. These two areas draw considerable users of the ramp from Brown and Kewaunee Counties, as well as the local Door County area.

No daily user count has ever been taken at the facility. However, local users have indicated that the maximum count for a morning ranges from 15-20 vehicles with trailers in the lot at one time. The season for boating activity at the ramp occurs from April through October, with minor usage in the months of March and November

dependent on weather conditions. Available days per year are thus 150 weekdays and 60 weekend days. Assuming that 25 percent of these days are lost to rough water conditions, there are approximately 112 weekdays and 45 weekend days that the site is used per year.

ESTIMATED YEARLY LAUNCHES

	Days		Users/Day		Total
Weekdays	112	x	15	=	1680
Weekends	45	x	35	=	1575
TOTAL LAUNCHES PER YEAR				=	3255

It is projected that if breakwater and on-land improvements are made at the facility, usage could increase by as much as 50 percent, the main reason being a much safer retrieval site if Lake conditions deteriorate, as well as more consistent quiet water to launch. Launching under 2-3 foot wave conditions will be possible with the breakwater, while it is presently difficult.

CHAPTER 3

PROTECTION ALTERNATIVES

Design Requirements

As previously stated, the objective of wave protection at the ramp is not to produce an all-weather harbor, but to provide protection for retrieval of boats after lake conditions have deteriorated. For launchings that have occurred under 0-1 foot wave conditions, it is conceivable that wave conditions could increase to the 2-4 foot range before these boaters could return to the ramp site. These wave heights make it extremely difficult to retrieve a boat under existing conditions since the waves prevent adequate control of the boat. Therefore, it is recommended that the breakwater be designed to provide adequate protection for boat retrievals against a maximum wave of 4 feet. In addition, the structure must be substantial enough to withstand the maximum wave height expected for the area. Even though there is significant fetch (± 230 statute miles) to produce a 25 foot wave, the maximum design wave for this area will depend on the design high water elevation. That is, the wave will be restricted to approximately 0.80 times the water depth in front of the proposed structure, at which point it will break.

Maximum design water level is based on the "Standardized Frequency Curves for Design Water Level Determination on the Great Lakes" by the U.S. Army Corps of Engineers, Detroit, Michigan, May 1979. Using a frequency of 100 years, the maximum design water level is 582.30 I.G.L.D. This elevation is derived by combining the water elevation for a frequency period and the peak rise for a frequency period at Sturgeon Bay. A check of the high water elevation using a frequency of 50 years only reduced the HWL to 582.0 or a reduction of 0.30 feet. It is, therefore, recommended that the 100 year frequency be used in determing the maximum wave.

The maximum wave that could occur is estimated as follows:

Maximum Design Water Level	582.3 feet
Minimum Lake Bed Elevation, Seaward Side of Proposed Breakwater	575.0 feet
MAXIMUM WATER DEPTH	7.3 feet

Therefore, the maximum wave height is 7.3 feet x 0.80 or 5.8 feet.

For each foot less than maximum design water elevation, the maximum wave would be reduced 0.80 feet. As an example, when the field elevations were taken on April 7, 1982, the water level was 579.3 with a bottom elevation of 575.0, therefore the maximum wave would be (579.3 - 575.0) x 0.80, or 3.4 feet.

To determine the top elevation of any stationary structure, it is necessary to look at the stage duration curve for the area in the "Great Lakes Basin Framework Study" Appendix II, by the Great Lakes Basin Commission. Figure 11-8 in that report shows that from 60 percent to 10 percent of the time, the water elevation equals or exceeds a range of 578.3 to 580.5. This range is on the high side of the curve, and is recommended for use since the water levels on Lake Michigan tend to be at the higher levels during the second and third quarters of the year, which coincides with the maximum use of the facility. Using the highest elevation of this range (580.5), the maximum wave would be (580.5 - 575.0) x 0.80, or 4.4 feet. The top of this wave would therefore be at 580.5 + 2.2 feet, or 582.7. It is, therefore, recommended that the top of any stationary structure be placed at an elevation of approximately 583.0 I.G.L.D. This compares to a mean water datum of 578.5 and a low water datum of 576.8.

Types of Protective Structures

The five types of protective devices that will be investigated for the ramp site are: 1) Rubble-Mound, 2) Wood Cribbing, 3) Steel Binwalls, 4) Steel Sheet Piling, and 5) Floating Tire Breakwater.

Rubble-Mound Breakwater

The rubble-mound breakwaters have been used extensively for shoreline wave protection on large bodies of water such as Lake Michigan. The big advantage is a long and relatively maintenance free design life. The disadvantages are that it is generally a very massive structure using valuable space and therefore very costly. For use in protecting the Whitefish Bay ramp, the size of the rubble-mound system would depend on purchasing the adjacent vacant lot to the south of the Town property, as the existing south property line does not provide sufficient width next to the ramp. For discussion purposes, a cost estimate for 185 lineal feet of the rubble-mound system is based on 1981 construction at the Brown County Bay Shore Park breakwater.

Estimated Cost = 1391 c.y. x $63.30/c.y.	=	$ 88,050
Plus Flow-Thru Structures	=	12,000
TOTAL ESTIMATED CONSTRUCTION COST OF RUBBLE-MOUND		$100,050

This estimate does not include the additional property required.

Wood Cribbing with Stone Fill

Wood cribbing has also been used extensively for shoreline wave protection. The advantages are relatively low material cost in cribbing construction but very labor intensive. A disadvantage for use at this site is the affect of ice on the wood exterior. The design life for a wood structure is dependent on the severity of the ice conditions and the deterioration of the wood above the water line that is subject to wetting and drying. Therefore, the installation of this type of structure should include some type of ice protection, and the wood above the total submergence line should be treated with a preservative to extend its life. The estimated cost is as follows:

1)	Construction of Cribbing	
	1700 s.f. of Face (1 side) @ $17.00/s.f.	= $28,900
	(889 c.y. or 24,000 c.f.)	
2)	Cribbing Installation, 6 days @ $1600/day	= 9,600
3)	Stone Fill Material, 1000 c.y. @ $8.00/c.y.	= 8,000
4)	Stone Basecourse and Rip-Rap Toe	
	Protection, 200 c.y. @ $10.00/c.y.	= 2,000
5)	Concrete Surface, 2775 s.f. @ $2.00/s.f.	= 5,550
6)	Flow-Thru Structure(s)	= 12,000
	TOTAL COST - WOOD CRIBBING, STONE FILLED	$66,050

Steel Binwalls

The steel binwall structure is very similar in nature to the wood cribbing, except for the materials that are used to construct the containment vessel. The construction is less labor intensive, and the structure is less susceptible to ice damage, and, therefore has a longer design life as compared to the wood cribbing. The estimated cost of construction is as follows:

1)	2060 s.f. of Face @ $25.00/s.f.	= $51,500
2)	Installation, 5 days @ $1600/day	= 8,000
3)	Stone Fill Material, 1000 c.y. @ $8.00/c.y.	= 8,000
4)	Stone Basecourse and Rip-Rap Toe Protection, 200 c.y. @ $10.00/c.y.	= 2,000
5)	Flow-Thru Structure	= 12,000
6)	Concrete Surface, 2775 s.f. @ $2.00/s.f.	= 5,550
	TOTAL COST - STEEL BINWALL, STONE FILLED	$87,050

Steel Sheet Piling

A breakwater of this type would involve an enclosure constructed of two parallel lines of sheet piling driven into the lake bed. The sheet piling is then tied together with cross connectors, and the containment area filled with stone and capped with concrete. This type of structure would provide a long-term, maintenance free, structure which would not be severely affected by ice. The estimated cost for this type of structure is as follows:

1)	Material, 3800 l.f. @ $9.00/l.f.	= $34,200
2)	Installation, 185 ft. @ $40.00/ft.	= 7,400
3)	Fill Material, 1900 c.y. @ $8.00/c.y.	= 8,000
4)	Stone Basecourse and Rip-Rap Toe Protection, 200 c.y. @ $10.00/c.y.	= 2,000
5)	Flow-Thru Structure	= 12,000
6)	Concrete Surface, 2775 s.f. @ $2.00/s.f.	= 5,550
	TOTAL COST - SHEET PILING, STONE FILLED	$69,150

Floating Tire Breakwater

There has been considerable interest in the past 10 years in floating breakwaters constructed of discarded tires and steel or wood poles, connected with a system of belting, and anchored to the lake bed. The big advantage of this system is a relatively low cost in comparison to the other more conventional systems. The cost of a pole-tire system constructed at the State University of New York in Buffalo in 1979 amounted to approximately $30 per lineal foot excluding the mooring system. This particular breakwater was 46 feet wide, constructed in module dimensions of 46 feet by 13 feet. If the system was capable of affording adequate protection at the Whitefish Bay ramp, the construction cost would be in the area of $15,000, assuming no cost for the tires. However, the floating pole-tire system does have the following limitations:

1) Previous studies have generally determined that the floating pole-tire system is technically feasible for wave protection in short fetch or semi-protected areas, which is not the case at the Whitefish Bay ramp.

2) Because of the ice conditions, the system would more than likely have to be removed and reset each fall and spring to protect it from ice damage. This would be a costly effort each year.

3) Aesthetically, this system is not as acceptable, as the structure collects considerable floating debris compounded by the appearance of floating tires itself.

Because of these limitations, a floating tire breakwater system is not recommended.

CHAPTER 4

ON-LAND IMPROVEMENTS

The most important on-land improvement in conjunction with a boat launching ramp is parking facilities. The existing area does have sufficient area to handle existing usage, but needs to be expanded and improved to facilitate an increased usage in an orderly and more maintenance free manner.

Within the confines of the existing Town property, it is possible to develop 24 parking spaces without over crowding the ramp facility. During times of high usage, it may be possible to park an additional 3-5 vehicles with trailers, but resulting in considerable congestion near the launch facility.

To provide an uncongested parking facility, it is proposed to expand these areas that currently exist as sod with gravel subsurface, add additional amounts of gravel to areas that are deficient, fine grade the entire area and provide two inches of hot-mix asphalt pavement. This will provide the Town with many years of a maintenance free parking area. Once the area is paved, the parking spaces would be delineated by striping, and concrete curb stops would be provided to control vehicles. These markings make it more likely that users will park in an orderly fashion, thus utilizing the area to its maximum.

Because of the close proximity of the parking area to the existing residence to the east, it is recommended to construct a wood fence 7-8 feet in height with sufficient closed area (± 80%) to screen out the site activity. This would provide the adjacent property owner with a semblance of privacy. Prior to selection of materials and construction, the property owner should be given an opportunity to discuss his ideas relative to the fence to make sure he is satisfied with the proposal, as long as it is economically reasonable.

The cost of these improvements is as follows:

1)	Excavation and Grading, Lump Sum	=	$ 2,000
2)	250 c.y. of Basecourse @ $6.00/c.y.	=	1,500
3)	200 l.f. of Fencing @ $15.00/l.f.	=	3,000
4)	24 Concrete Parking Curbs @ $25.00/each	=	600
5)	325 tons of Asphalt @ $27.00/ton	=	8,775
6)	Striping, Lump Sum	=	125
	TOTAL COST		$16,000

There is a strong possibility that with the breakwater installation, acceptance of the ramp as a safe launch site could increase its usage to the point that parking facilities could be deficient during heavy weekend usage. It may be necessary for the Town to investigate additional property nearby for parking facilities.

While other facilities such as picnic tables, benches, refuse containers, and toilet facilities may be considered in the future, it does not appear to be a necessity to the function of the ramp. The addition of these secondary facilities could eventually transform the property to a park facility, which would add a burden on the Township with regard to police protection, litter, and potential nuisance complaints from the local residences. This type of development should be avoided in order to keep the natural integrity of the shoreline in a passive state as it exists presently.

CHAPTER 5

ENVIRONMENTAL ANALYSIS

Introduction

The project site is located in Whitefish Bay of Lake Michigan which is bounded by the headlands of Cave Point, 3 miles to the north and Whitefish Point, 2.5 miles south. The bay is relatively shallow with extensive sand beaches and large dune areas. The original 50 foot long structure was constructed in 1968 in order to provide for a small boat launching. Various improvements have been made over the years to upgrade the facility to its existing condition. This project proposes the construction of an additional 185 feet of pier in an "L" shape for the purpose of providing a safe recovery for small boats during increasing seas.

This project is limited in size and scope with an insignificant impact upon the environment. The facility represents 0.3 percent of the shoreline between the two headlands. To facilitate the analysis of the environmental impacts of this project a matrix table has been developed which assess the magnitude of probable impacts, both beneficial and adverse. The matrix is divided into three major areas of effects i.e. social, economic, and natural resources. These effects

are subdivided into 34 specific items. The items are ranked as either having no appreciable effect or significance, substantial, or minor beneficial or adverse impacts. The ranking by necessity is subjective.

ENVIRONMENTAL IMPACT ASSESSMENT REVIEW
WHITEFISH BAY BOAT RAMP IMPROVEMENTS

NAME OF PARAMETER	MAGNITUDE OF PROBABLE IMPACT						
		INCREASING BENEFICIAL IMPACT ←			→ INCREASING ADVERSE IMPACT		
A. SOCIAL EFFECTS	SIGNIFICANT	SUBSTANTIAL	MINOR	NO APPRECIABLE EFFECT	MINOR	SUBSTANTIAL	SIGNIFICANT
1. Historical/Archaeological Values				X			
2. Noise Levels				X			
3. Aesthetic Values					X		
4. Recreational Opportunities		X					
5. Transportation				X			
6. Public Health & Safety	X						
7. Community Cohesion (Sense of Unity)			X				
8. Community Growth & Development				X			
9. Business and Home Relocations				X			
10. Existing/Potential Land Use				X			
11. Controversy				X			
B. ECONOMIC EFFECTS							
1. Property Values				X			
2. Tax Revenues				X			
3. Public Facilities and Services				X			
4. Regional Growth				X			
5. Employment				X			
6. Business Activity				X			
7. Farmland/Food Supply				X			
8. Commercial Navigation				X			
9. Flooding Effects				X			
10. Energy Needs and Resources				X			
C. NATURAL RESOURCE EFFECTS							
1. Air Quality				X			
2. Terrestrial Habitat				X			
3. Wetlands				X			
4. Aquatic Habitat				X			
5. Habitat Diversity and Interspersion			X				
6. Biological Productivity				X			
7. Surface Water Quality				X			
8. Water Supply				X			
9. Groundwater				X			
10. Soils				X			
11. Threatened or Endangered Species				X			
12. Littoral Transport					X		
13. Fish Movement				X			

Social Effects

Public health and safety has been identified as a significant beneficial impact of this project. The existing single pier does not provide any protection for a boat caught in a storm. By providing a breakwater facility, significant protection will be provided. The nearest safe harbors are 15 miles to the south at Sturgeon Bay and 12 miles north of the project at Baileys Harbor.

A substantial beneficial impact is the increase in recreational opportunities for the community. Currently, no protection is available from the launch ramps during increasing wave conditions, and boat damage does occur as well as personal injury. By constructing the proposed project, boaters will be able to utuilize this facility more frequently under much safer conditions.

A minor beneficial impact has to do with community cohesion that may develop from construction of the project. The facility is owned and maintained by the Town of Sevastopol and used primarily by townspeople. Increased usage will likely foster a greater sense of unity among townspeople as they utilize the facility.

In general, there are no appreciable social impacts from the project.

A minor adverse impact may be generated relative to aesthetic values. The construction of additional facilities into the lake may be offensive to some people. At its maximum, however, the structure will be 130 feet off shore and run 100 feet along the shore. It will be a containment structure of sheet pile or steel containment bins and maintained by the Town in a neat and orderly manner.

Economic Effects

No economical impacts have been identified for this project.

Natural Resources

A minor beneficial impact relating to habitat diversity has been identified for this project. There are 5.5 miles of sandy beach and sand bottom between the two confining headlands to this bay. Construction of this facility will provide a structure with limited "edge" that can provide habitat for small aquatic plants and animals. The calmer water within the harbor can provide a modified environment for smaller, weak, and/or injured fish.

This project would have no appreciable effect upon 11 of the 13 natural resource items.

A minor adverse impact to littoral drift transportation may result from this project. The effect is identified as minor based upon the observed effect of the existing structure, the variability of the direction of storms and the design of the proposed structure. The existing pier has not created any appreciable erosion on either side of the structure, due in part to its length and the minor near shore littoral drift. The facility is located approximately equidistant from the two headlands, and wave patterns appear to equalize the deposition of sand on both sides of the structure. The additional facility will be longer, and by its nature, will provide quiet water which will result in sediment deposition behind the structure.

To minimize this deposition with subsequent erosion, down drift culverts will be placed through the structure. It is anticipated that the culvert(s) perpendicular to the shoreline will have adjustable gate(s) so that they can be closed during the boating season but opened during the winter when quiet water is not necessary. Winter storms should provide enough wave energy to scour the littoral drift deposited during the summer.

Conclusion

In conclusion, the project is identified as having a significant beneficial impact to the health and safety of the boating public while having only minor adverse impacts to the environment.

CHAPTER 6

ECONOMIC ANALYSIS

Demand

As discussed under usage of the existing facility, it is estimated that during the seven month boating period approximately 3,255 boat launches and retrievals take place at the site. With the nearest improved launch sites being 15 miles to the south and 12 miles to the north along the shoreline, a usage increase of at least 50 percent does not seem unrealistic if the breakwater is installed. This increase would bring the yearly launches and retrievals up to approximately 4,900. It is not anticipated that this increased usage will occur immediately, but would over a period of 3-5 years as the word gets around that a "safe" launch site is available on the Lake shore between Sturgeon Bay and Baileys Harbor. This will be especially true if the Lake Michigan sport fishing continues to be as spectacular as it is today, and within reach of the small boat owner.

Development Cost

Based on estimates of protection alternatives and on-land improvements previously discussed, development costs are projected as follows:

1)	Breakwater Construction	$ 69,150
2)	On-Land Improvements	16,000
3)	Engineering	9,000
4)	Contingency	8,850
	TOTAL DEVELOPMENT COST	$103,000

The above cost does not consider any land acquisition for parking expansion or park related facilities.

Operations and Maintenance Cost

With the construction of a permanent breakwater and installation of a hard surface parking area, yearly maintenance of the boat launch facility should be limited to general area cleanup and possibly refuse pick-up. This type of work would amount to approximately $750 per year.

Revenue

The only type of revenue that could be generated from a municipal owned boat ramp facility would be through the implementation of user fees, and only if an economical method of collection could be devised. Typical launching fees in the area range from $2-$3 daily, with season passes available at Sturgeon Bay for $20.

The small size of the Whitefish Bay ramp facility and the limited usage projection would make a full-time attendant economically unfeasible. The only exception may be on weekends during heavy use times of the season—July, August, and September. The following assumptions will be used to determine the economic feasibility for a typical weekend day:

1) 35 Launches
2) Launch Fee of $2.00
3) Attendant on Duty for 8 Hours
4) 80 Percent of Launches will Occur While Attendant is on Duty
5) Attendant Pay Rate at $3.25/hour

Revenue	- 35 launches x 80% x $2.00/launch	=	$56.00
Expense	- 8 hours labor @ $3.25/hour	=	26.00
	NET REVENUE		$30.00/day

Extending the revenue per day over the 26 weekend days during the busy period, while projecting 25 percent loss due to weather, it is estimated that the yearly revenue would be $585.

Another option to consider would be to provide a container for which users of the facilities could voluntarily make donations for use of the facility. While this method has been tried with little success at other similar facilities, it may provide enough revenue to provide

for the yearly cleanup costs of the site. If this method is used, provisions should be made for daily removal of any contributions. This option could also be used in conjunction with a part-time attendant.

It is apparent that even though some revenue is possible, the amount would be insufficient to finance any substantial improvements to the facility. With this consideration, along with the fact that the majority of the users presently are residents of Town of Sevastopol, thought should be given to providing free launch access as it presently exists. The City of Sturgeon Bay, for example, provides free launching for City residents, and charges non-residents. At the present time this would not be economical for the Town of Sevastopol as the volume of non-residential users would not be adequate to pay for the attendant.

Whichever method is decided upon by the Town, it should be left open to periodic review as maintenance costs and usage changes.

Development Capital

Poor economic conditions have put a strain on all governmental budgets, whether it be at the local, State, or Federal level. As a result, all of the programs that would be available to help fund a project of this nature, are either no longer in existence or are out of money. This is not to say that the picture might not change in the

next 12 months. Ironically, while potential assistance grants are generally not available, the cost of construction for projects of this nature is currently at its lowest level for the past 4-5 years. Thus, governmental bodies that are currently able to fund public facility projects get the advantage of an extremely competitive market, both in materials and construction.

Two options seem to be available. One option is to finalize and approve an improvement plan and wait for assistance grants to again become available. The second option is to try to locally fund the improvements. If the project is to be funded locally, consideration should be given to obtaining assistance from Door County. While presently the majority of the ramp users are from the Town of Sevastopol, it is likely that once the improvements are made, an increasing number of boaters from other parts of Door County will utilize the facility. To some extent it will thus become a County wide facility, not only for County residents, but also for visiting tourists, the majority of which would be sport fishermen. There usage would benefit the County wide economy.

CHAPTER 7

RECOMMENDATIONS

Improvements

In order to provide a long lasting maintenance free breakwater, it is recommended that the construction utilize an enclosure of steel sheet piling or the steel binwall method. Both containments would be filled and capped with concrete. Provisions should be made for flow-thru structures to minimize the deposition of littoral drift, which would help maintain the integrity of the shoreline as well as minimize the need for periodic dredging at the ramp. To provide a true economic comparison, the two types of construction should be bid as alternates. This will provide a sound cost comparison upon which a decision can be made as to which type of construction to utilize.

If matching funds are not available for the project, the on-land parking improvements and fencing could be done in phases after the breakwater is installed, as the projected increase in usage occurs and requires additional facilities.

The total project could, therefore, be phased in three parts with the following cost breakdown:

Phase I	Breakwater	$ 87,000
Phase II	Gravel Parking and Fencing	7,000
Phase III	Asphalt Surfacing of Parking Area	9,000
	TOTAL COST	$103,000

Permits

The following agencies require permits prior to construction of a breakwater at the ramp facilities:

1) Wisconsin Department of Natural Resources

2) Department of the Army, Corps of Engineers

At a minimum, 8-12 weeks should be programmed into the project schedule to obtain these permits.

Financing

Even though assistance grants through State or Federal agencies are not available at this time, periodic contact with the following agencies should be continued in event funds do become available in the future.

1) Wisconsin Department of Natural Resources
   Lake Michigan District Office
   % Jeff Pagels
   Post Office Box 3600
   Green Bay, WI 54303
   Telephone: (414) 497-4020

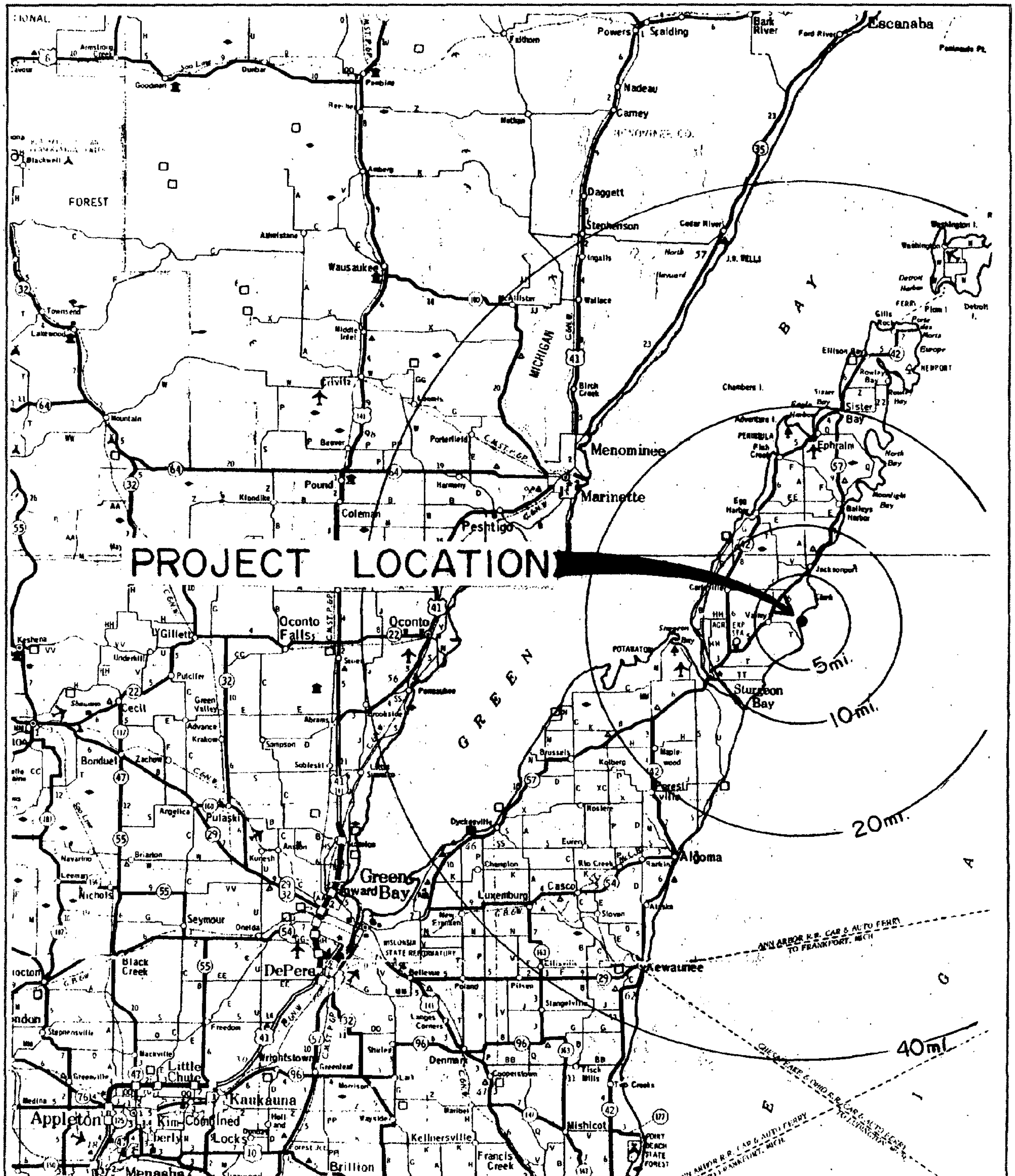
2) Coastal Management Program, Department of Administration
% Allen H. Miller
101 South Webster Avenue, Seventh Floor
Post Office Box 7864
Madison, WI 53707
Telephone: (608) 266-3687

3) Bay-Lake Regional Planning Commission
% Ralph Bergman, Executive Director
Suite 450, S.E. Bldg., U.W.G.B.
Green Bay, WI 54302
Telephone: (414) 465-2135

The Department of the Army, Corps of Engineers has a program under Section 107 by which they will administer the entire project from the original reconnaissance work to construction and contribute 50 percent funding up to $8,000,000 for a feasible project. The problem is that each step requires Washington approval, and if every step progresses smoothly, it could take a minimum of 5 years to complete. This source is highly unlikely.

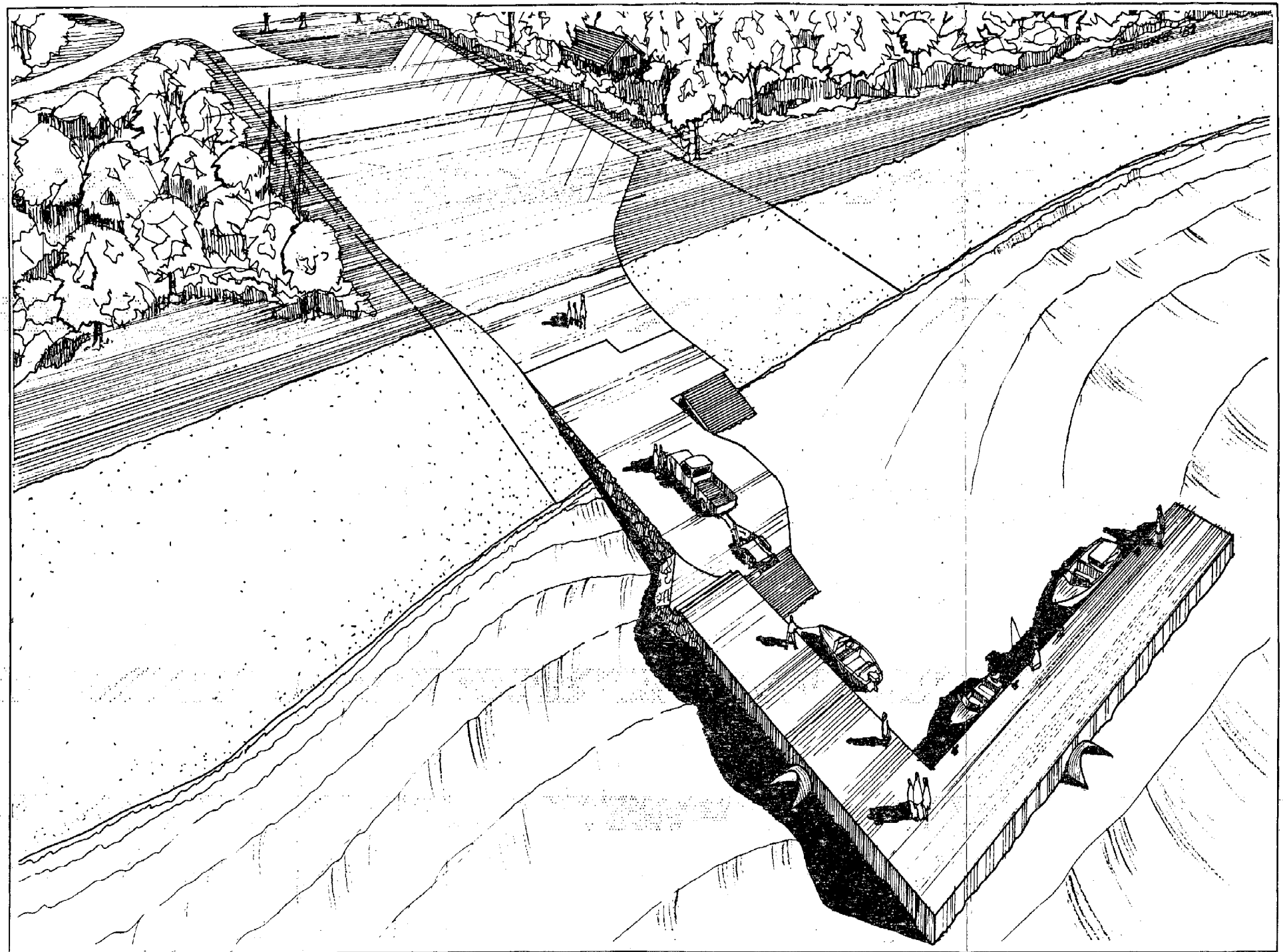
To fund the project locally would of course depend upon the condition of the local budget as well as the Town's ability to levy a tax for this type of improvement. If the money is not presently available, the least demanding funding method is to obtain the $103,000 through general obligation bonds. If 10-year bonds were able to be obtained at a rate of 12 percent, the yearly obligation would average approximately $18,000 per year for the 10-year period. As discussed previously, user fee revenue would be an insignificant source of revenue for the development cost. However, any contribution that could be obtained from the County would offset a portion of the Town's obligation.

It is further recommended that if the Town can fund the project, it should proceed with development in order to take advantage of the competitive construction market. Most funding programs, if they are rejuvenated, will probably return with a maximum contribution of 50 percent. This potential 50 percent savings to the Town can quickly be eroded by inflationary pressures if funding assistance is not available for the next 3-5 year period.



LOCATION MAP

N



NO	DATE	APPROV	REVISION	NO	DATE	APPROV	REVISION

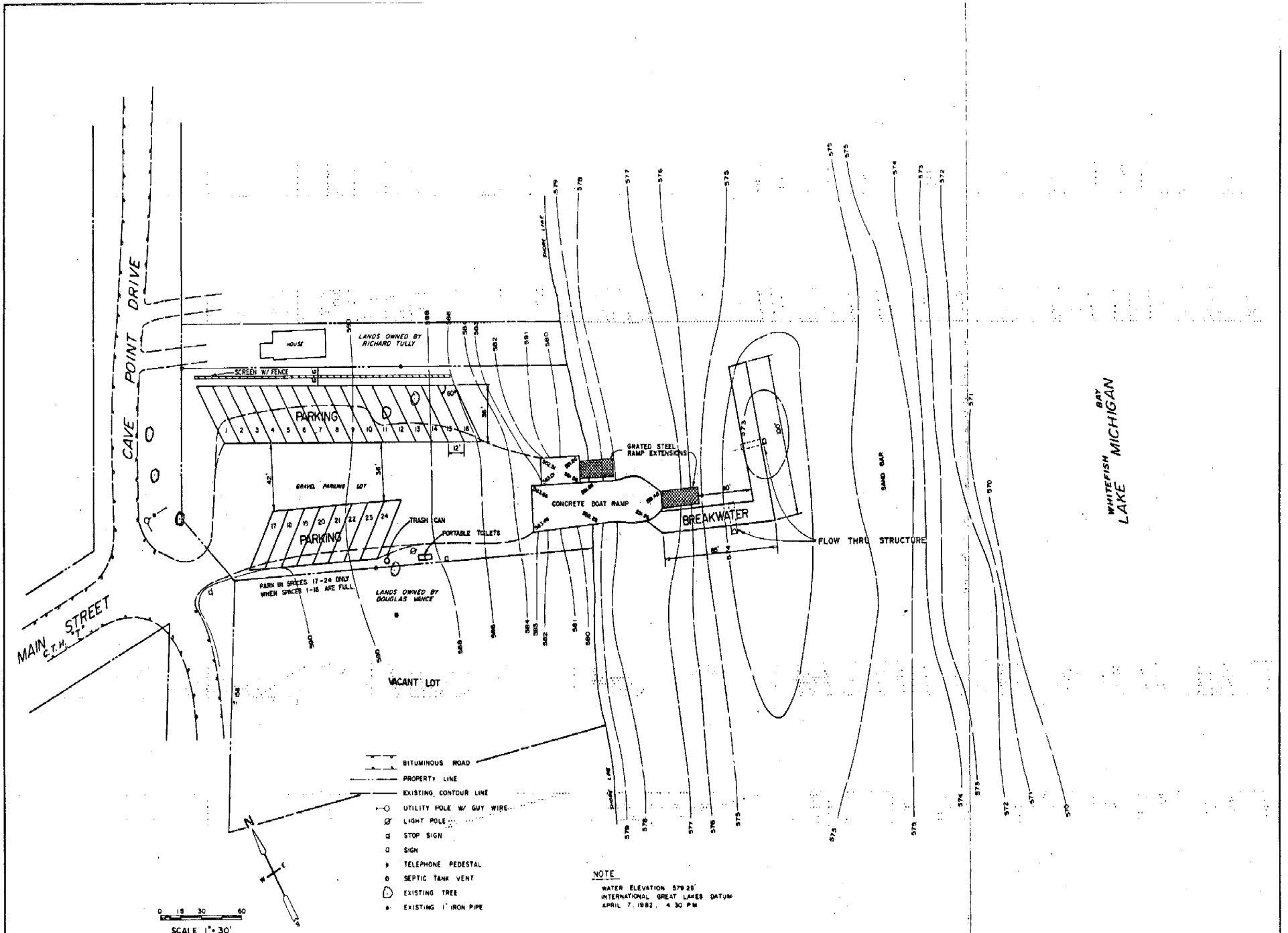
DRAWN JD
CHECKED RS
DESIGNED RS

CONCEPTUAL PLAN

SUBMITTED CK
DATE 7-82
JOB 835

ROBERT E. LEE & ASSOCIATES, INC.
CONSULTING ENGINEERS (414) 432-6338
Box 2100 Green Bay, Wis. 54306

SHEET NO. 1



NOTE

WATER ELEVATION 579.28'
INTERNATIONAL GREAT LAKES DATUM
APRIL 7, 1982, 4:30 P.M.

NO	DATE	APPROV	REVISION	NO	DATE	APPROV	REVISION

DRAWN T. VANDOCHE
CHECKED A.S.
DESIGNED R.S.

WHITEFISH BAY BOAT RAMP IMPROVEMENTS

DETAILED SITE PLAN

SURVEY FIELD 7/12/82
DATE 7/82
JOB NO 695

ROBERT E. LEE & ASSOCIATES, INC.
CONSULTING ENGINEERS (414) 432-8338
Box 2100 Green Bay, WIS 54306

SHEET NO 2

NOAA COASTAL SERVICES CENTER LIBRARY
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